

# BALLISTIC GMR STRUCTURE USING NANOCONSTRUCTION IN SELF PINNED LAYERS

## ABSTRACT

A magnetic head having a pinned area, a free area, and a nanoconstricted area encompassing portions of the pinned and free areas. A first layer of magnetic material extends along the pinned and free areas. An AP coupling layer extends along the pinned area. A third layer of magnetic material is positioned above the AP coupling layer, an active portion of the third layer extending along the pinned area but not along the free area. The first and third layers have magnetic moments that are self-pinned antiparallel to each other in the pinned area and a portion of the nanoconstricted area encompassing the pinned area.